L 10806-63
ACCESSION NR: AP3002740   /

capacitor bank produced 350-koe fields, but the pulse duration was reduced to
only 0.01 sec. Orig. art. has: 4 figures.

ASSOCIATION: Fizicheskiy fakul'tet MGU (Physics Faculty of MGU)

SUBMITTED: 26Jul62   DATE ACQ: 12Jul63   ENCL: 00

SUB CODE: 00   NO REF SOV: 002   OTHER: 004

nh/Kal
Card 2/2

RODE, V.Ye.; VEDYAYEV, A.V.; KRAYNOV, B.N.

Magnetization intensity of copper-cadmium ferrite in
pulsed fields up to 200 koer. Fiz. tver. tela 5 no.6:
1755-1756 Je '63.   (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 17161-63   EWT(1)/BDS/ES(w)-2   AFFTC/ASD/ESD-3/IJP(C)/SSD   Pab-4'
ACCESSION NR: AP3007055   s/0056/63/045/003/0415/0417

AUTHOR: Rode, V. Ye.; Vedyayev, A. V.

TITLE: Investigation of the magnetization of ferrite garnet in
strong pulsed magnetic fields

SOURCE: Zh. eksper. i teoret. fiziki, v. 45, no. 3, 1963, 415-417

TOPIC TAGS: ferrite garnet magnetization, ferrite garnet magneti-
zation curve, ferrite magnetization

ABSTRACT: The magnetization of gadolinium garnet has been studied
at room temperature in 6-msec pulsed magnetic fields up to 220 k-oe.
The measurements of the dependence of the magnetization curve on
the field strength showed a rapid increase of magnetization start-
ing at 70 k-oe, which means that the critical field has a value
many times higher than the 5000 oe predicted for this material.
The susceptibility was calculated as $23 \pm 4K$ for the exchange in-
teraction between the ions of gadolinium and iron. The effective

Card 1/2

L 17161-63
ACCESSION NR: AP3007055

field acting on the sublattice of gadolinium ions was found to be
(2 $\pm$0.4) x 10^5 oe, which closely conforms with American data ob-
tained for the exchange resonance. Orig. art. has: 1 figure and
7 formulas.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet (Moscow
State University)

SUBMITTED: 04Feb63   .   DATE ACQ: 08Oct63   ENCL: 00

SUB CODE: PH   .   NO REF SOV: 005   OTHER: 001

Card 2/2

ACCESSION NR: AP4023385

S/0048/64/0028/003/0433/0435

AUTHOR: Rode, V.Ye.; German, R.

TITLE: Experimental determination of the exchange integrals in Fe, Co and Ni /Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 June to 5 May 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.3, 1964, 433-435

TOPIC TAGS: magnetization, low temperature magnetization, iron magnetization, cobalt magnetization, nickel magnetization, collectivized electron magnetization

ABSTRACT: The magnetization of Fe, Co and Ni was investigated at temperatures from 4.2 to 70°K and field strengths up to about 20 kOe. The 8 mm diameter 160 mm long polycrystalline samples were annealed for 3 hours at 900°C and cooled slowly. The temperature was altered in finite increments and the consequent changes in magnetization were determined with an accuracy of 5%. The exponent n on T in the relation $(I_0-I)/I_0 = aT^n$ was determined, where I is the intensity of magnetization, T is the absolute temperature, and I_0 is the value of I at T = 0. The values of n for Fe and Co were very close to 3/2. For Ni, the value of n was 3/2 for T < 36°K and about

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ACCESSION NR: AP4023385

7/4 for $36°K < T < 70°K$. The constants c_1 and c_2 in the relation $(I_0-I)/I_0 = c_1 T^{3/2} +$ $+ c_2 T^2$ were also determined. The term in T^2 represents the contribution of the collectivized electron model. Except for Ni, the values of c_2 were very small. The value of $\Delta I/\Delta T$ (T changing from $4.2°$ to $13.3°K$) as a function of the magnetizing field passed through a maximum at fields of about 15 or 16 kOe (at least for Fe and Ni; the corresponding data for Co are not given). Analysis of these curves indicates that true magnetization begins to dominate over rotation processes at fields of this order of magnitude. Orig.art.has: 3 formulas, 4 figures and 2 tables.

ASSOCIATION: Fizicheskiy fakultet Moskovskogo gosudarstvennogo universiteta (Physics Department, Moscow State University)

SUBMITTED: 00   DATE ACQ: 10Apr64   ENCL: 00

SUB CODE: PH   NR REF SOV: 000   OTHER: 000

Card 2/2

L 1316-66   EWT(1)/EWT(m)/EWP(t)/EED-2/EWP(z)/EWP(b)   LJP(c)   JD/HW
ACCESSION NR: AP5012548
                                                UR/0181/65/007/005/1393/1396
AUTHOR: Rode, V. Ye.; Gerrmann, R.; Grishina, I. V.

TITLE: Temperature dependence of the magnetization of ferrites at low temperatures

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1393-1396

TOPIC TAGS: ferrite, magnetization, temperature dependence, nickel containing al-
loy, zinc containing alloy

ABSTRACT: The authors investigate the temperature dependence of the saturation
magnetization of Ni-Zn ferrites with different Zn content, for the purpose of stu-
dying the influence of the degree of reversal of the ferrite magnetization on the
temperature variation. The measurements were made in the interval 4.2--50K. The
ferrites were obtained from oxides by means of the usual ceramic technology. The
density of the samples was 95 to 96% of the x-ray density. The measurement method
was described elsewhere (PTE No. 1, 173, 1964). In all samples except the one with
composition (0.73 NiO--0.27 ZnO) Fe_2O_3, the saturation increased like $T^{3/2}$ in the
temperature range from 4.2 to 30K. The magnetization of the remaining sample in-
creased like T^2. The proportionality coefficient C in the equation $\Delta I = CT^{3/2}$ is
of the same order of magnitude as predicted theoretically. Orig. art. has: 5
figures, 1 formula, and 2 tables.

Card 1/2

L 1316-66

ACCESSION NR: AP5012548

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University) 44/55

SUBMITTED: 24Feb64

NR REF SOV: 005

ENCL: 00

OTHER: 001

SUB CODE: SS

3

Card 2/2

L 1574-66   EWT(m)/EWP(t)/EWP(z)/EWP(b)   IJP(c)   JD/HW

ACCESSION NR: AP5019207

UR/0056/65/049/001/0003/0006

AUTHOR: Rode, V. Ye.; Gerrmann, R.; Mikhaylova, N. V.

TITLE: Investigation of deviations from Bloch's law for the saturation magnetization in some iron-nickel alloys

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 1, 1965, 3-6

TOPIC TAGS: saturation magnetization, iron alloy, nickel containing alloy, temperature dependence

ABSTRACT: The authors have measured the temperature dependence of the saturation magnetization in a number of iron-nickel alloys containing from 15 to 74% of Ni, using a method previously described (PTE no. 1, 173, 1964). The change in the saturation magnetization caused by cooling the specimen from a temperature T to 4.2K was measured. The measurements were made in a magnetic field of 20 kOe, so that the effects of the magnetic anisotropy and the temperature dependence of the saturation magnetization were negligible. To check the validity of Bloch's law (that the magnetization is proportional to $T^{3/2}$), the change in magnetization was plotted against the quantity $T^{3/2}(1 + g)$ for each alloy (g is a function of the temperature ratio and of the magnetic field defined in the text). It is shown that Bloch's law holds provided corrections for the effective internal field are intro-

Card 1/2

L 1574-66
ACCESSION NR: AP5019207

duced, although deviations from this law, which cannot be described by theoretically predicted power laws, occur in certain alloys above 30--40K. It is found, however, that the deviations can be reconciled with a formula originally derived by Wohlfarth et al. (Proc. Phys. Soc. v. 83, 46, 1964). The coefficients for this formula are listed in a table. Orig. art. has: 4 figures, 3 formulas, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 10Jul64   ENCL: 00   SUB CODE: MM; EM

NR REF SOV: 005   OTHER: 001

Card2/2

RODE, V.Ye.; GASIMANI, K., GRICHINA, I.V.

Temperature dependence of the magnetization of ferrites at low temperatures. Fiz. tver. tela 7 no.5:1393-1394 My '65.   (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

. ACCESSION NR: AP4031192   S/0056/64/046/004/1507/1508

AUTHORS: Rode, V. Ye.; Gerrmann, R.; Korolev, L. M.

TITLE: Investigation of temperature dependence of saturation of Gd

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1507-1508

TOPIC TAGS: gadolinium, saturation magnetization, saturation magnetization temperature dependence, energy gap, Bloch law

ABSTRACT: The temperature dependence of the saturation magnetization of Gd was investigated at low temperatures (from 4.2 to 30K), using a procedure described in detail earlier (PTE, no. 1, 173, 1964). The specimen was a cylinder made of polycrystalline gadolinium 110 mm long and 8 mm in diameter, containing iodine, calcium, iron, and copper impurities.   The measurements were made in a field of 18,600 Oe.   The jump in the magnetization was determined accurate to 5%, and the temperature measurement was 7--5% from 4.2 to 10--12K and 2% above

Card   1/3

ACCESSION NR: AP4031192

12K. The curve drawn through the experimental point can be described by the formula

$$I = I_0 - AT^{\frac{3}{2}} \exp(-\Delta/T).$$

which does not coincide with the Bloch formula $I = I_0(1 - CT^{3/2})$.

The results indicate that a gap of 30K exists in the energy spectrum wave in gadolinium. Orig. art. has: 1 formula and 2 figures.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet (Moscow State University)

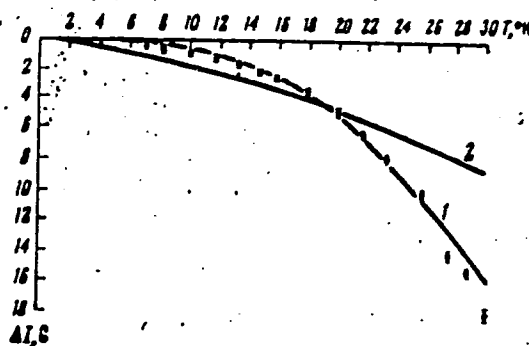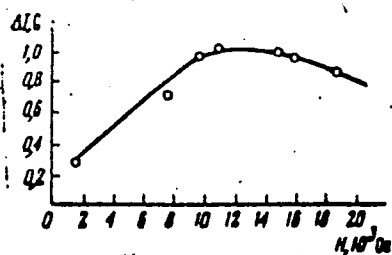SUBMITTED: 01Feb64   DATE ACQ: 07May64   ENCL: 01

SUB CODE: EM, SS   NR REF SOV: 002   OTHER: 001

Card 2/3

Left - variation of the jump in magnetization with the magnetic field in gadolinium.

Right - temperature variation of jump in magnetization. 1 - present results, 2 - Bloch formula.

Card 3/3

L 7038-65   EWT(m)/EPF(c)/EWP(q)/EWP(b)   Pr-4/Pad   RAEM(t)   JD/HW

S/0056/64/046/005/1598/1600

ACCESSION NR: AP4037569

AUTHOR: Rode, V. Ye.; Gerrmann, R.

TITLE: Investigation of the magnetization of iron, cobalt, and nickel at low temperatures

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1598-1600

TOPIC TAGS: iron, cobalt, nickel, magnetization, saturation magnetization, magnetization temperature variation, magnetic moment variation, Bloch law

ABSTRACT: To gain information on the exchange interaction that leads to the existence of the ferromagnetic state, the temperature dependence of the saturation magnetization of polycrystalline iron, nickel, and cobalt was measured in fields up to 20 kOe and in the temperature internal 4.2—70K, and the exchange parameters were determined. To increase the accuracy, the change in magnetic moment with changing temperature was measured instead of the total magnetic moment. Cylindrical polycrystalline samples were heated electrically by a coil wrapped around the sample and cooled with liquid helium. The measurement accuracies were 0.006% for the magnetic moment (in nickel), 0.1K for the temperature,

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L 7038-65

ACCESSION NR: AP4037569

and 1% for the exchange integral. The field was strong enough to eliminate the effect of anisotropy on the temperature variation of the saturation magnetization. The results show that the saturation magnetization of nickel deviates from the Bloch formula

$$\Delta I = I_0 - I = I_0 c T^{3/2}.$$

(the calculated values of c are listed in Enc. 01) and a more correct expression is

$$\Delta I / I_0 = c T^{3/2} + d T^{5/2} e^{-\Delta/kT}$$

where d varies from 2.3×10^{-5} to 1.3×10^{-5} as the field increases from 18.6 to 20 kOe, and the value obtained for Δ/k is $(98 + 4)K$. The deviations from the Bloch law in the case of iron and cobalt are smaller. Orig. art. has: 2 figures, 3 formulas, and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet (Moscow State University)

Card 2/6

L 7038-65
ACCESSION NR: AP4037569

SUBMITTED: 04Dec63

SUB CODE: IC, EM

NR REF SOV: 004

ENCL: 03

OTHER: 003

Card   3/6

L 7038-65

ACCESSION NR: AP4037569

Sample	$c \cdot 10^4$	A, erg	Temp. interv., $^{\circ}K$	H, kOe
Fe	$4,5\pm0,1$	$(1,50\pm0,5) \cdot 10^{-14}$	$4,2-70$	20
Co	$2,4\pm0,1$	$(2,92\pm0,05) \cdot 10^{-14}$	$11-70$	20
Ni	$9,3\pm0,25$	$(2,3\pm0,04) \cdot 10^{-14}$	$4,2-70$	20
Ni [1]	$9,65\pm0,25$		$4,2-120$	12
Fe [2]	$3,7\pm0,37$		$1,4-5$	to 10
Ni [2]	$10\pm1,0$		$1,4-5$	to 40

Coefficient of the Bloch formula (c) and exchange integral (A) obtained in the measurements of the temperature variation of magnetization of Fe, Co, and Ni

Card 4/6

L 7038-65

ACCESSION NR: AP4037569

Fe		Co*		Fe		Co*	
T, °K	ΔI, G	T, °K	ΔI, G	T, °K	ΔI, G	T, °K	ΔI, G
4,2	0	11,0	0	25,0	0,00	30,3	0,40
5,4	0,05	14,4	0,06	27,6	1,05	32,7	0,46
7,1	0,08	15,9	0,09	30,4	1,24	35,0	0,55
9,0	0,15	17,0	0,11	34,0	1,53	40,0	0,68
10,0	0,19	18,0	0,14	40,0	1,84	44,8	0,86
12,0	0,27	19,1	0,16	44,8	2,22	49,1	1,00
13,3	0,33	20,1	0,17	49,1	2,58	53,5	1,17
15,9	0,44	21,8	0,20	53,4	2,95	61,0	1,45
18,0	0,54	23,5	0,25	61,0	3,50	68,2	1,73
21,8	0,75	27,6	0,32			74,8	2,0

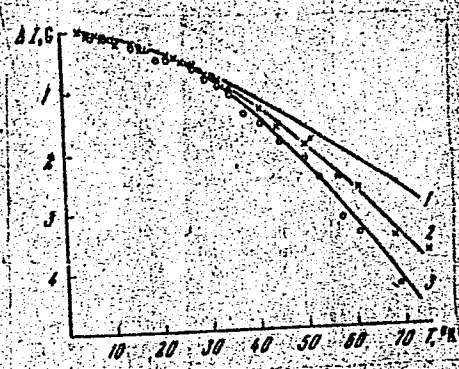*Values of ΔI for cobalt reduced to 11K

Temperature variation of change in magnetization of cobalt and iron

Card 5/6

L 7038-65

ACCESSION NR: AP4037569

ENCLOSURE: 03

Dependence of saturation magnetization of nickel on the temperature:
O - 18.6 kOe; X - 20 kOe (Curve 1 - Bloch formula; curves
2 and 3 - experimental data with d = 1.3 and 2.3 x 10⁻⁵)

Card 6/6

RODE, V.Ye.; GERRMANN, R.

Experimental determination of exchange integrals in Fe, Co, and Ni. Izv. AN SSSR. Ser. fiz. 28 no. 3:433-435 Mr '64.
(MIRA 17:5)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta.

RODE, V.Ye.; GERRMANN, R.

Measuring the temperature dependence of saturation magnetization of ferromagnetics. Prib. i tekh. eksp. 9 no.1:173-175 Ja-F '64.
(MIRA 17:4)

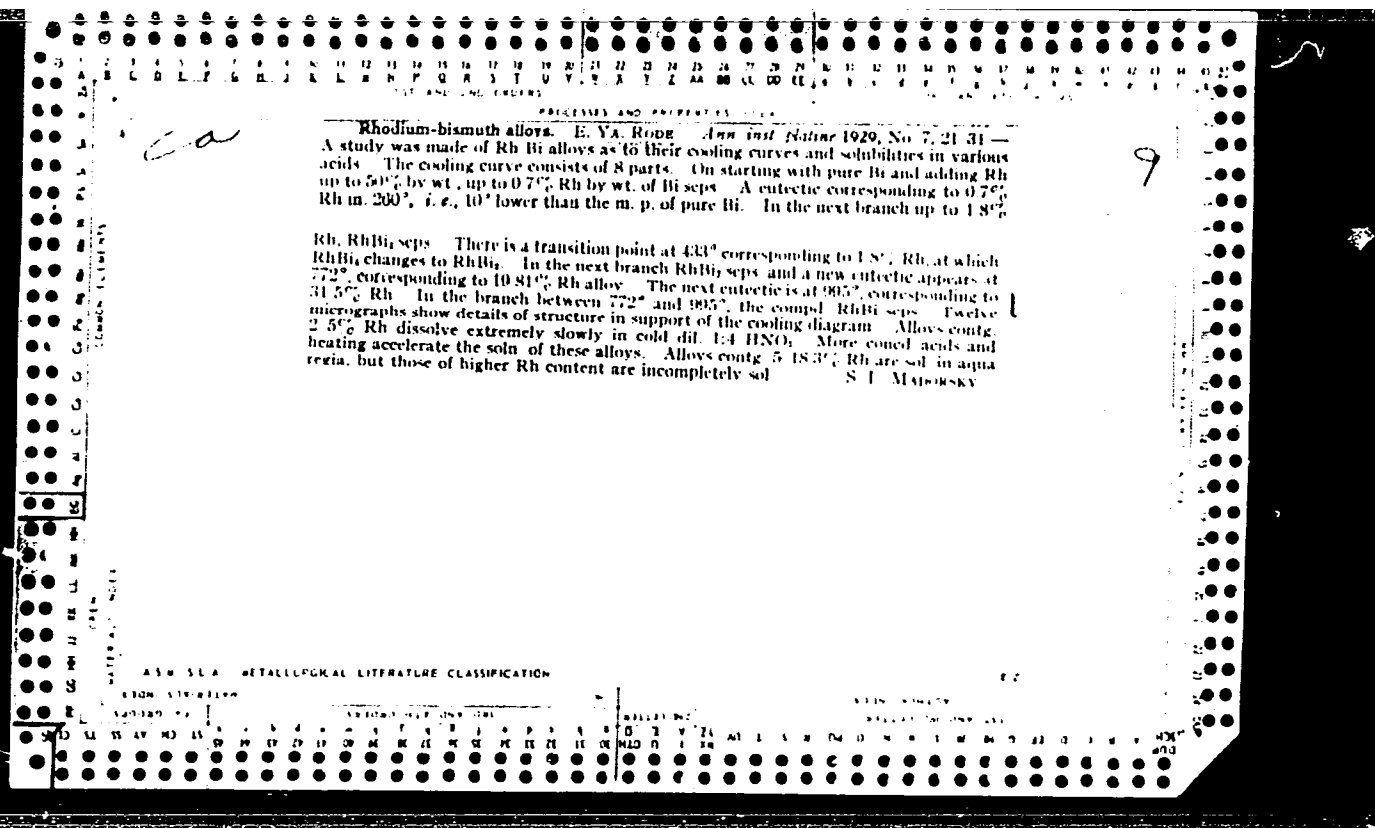1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta.

RODE, E. YA.

Physicochemical study of metallic oxides and hydroxides. E. Ya. Rode. Zhur. Neorg. Khim. 1, 1430-0(1956).—The simple and complex oxides and hydroxides of Pb, Fe, Mn, Ni, Co, W, and Mo were studied and the data are presented in the form of temp.-compn. diagrams for the systems. The analytical methods have been described earlier (Rode, Oxygen-containing Compounds of Manganese, 1952, 397 pp. (C.A. 48, 13518h)). The structures of the various oxides and their phase transitions are discussed. I. R. I.

RAFALOVICH, Iosif Markovich, professor, doktor; ROOK, Ye.Ya., doktor tekhnicheskikh nauk, retsenzent; MIKHAYLENKO, A.Ya., kandidat tekhnicheskikh nauk, retsenzent; GUL'DIN, I.T., redaktor; EL'KIND, L.M., redaktor izdatel'stva; ISLENT'YEVA, P.G., tekhnicheskiy redaktor

[Determining thermal and physical properties of nonferrous metals] Opredelenie teplofizicheskikh svoistv materialov tsvetnoi metallurgii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metal- lurgii, 1957. 110 p.   (MLRA 10:10)
      (Nonferrous metals)

Rhodium-bismuth alloys. E. Ya. Rode. *Ann. Inst. Platine* 1929, No. 7, 21-31 —
A study was made of Rh·Bi alloys as to their cooling curves and solubilities in various
acids. The cooling curve consists of 8 parts. On starting with pure Bi and adding Rh
up to 50% by wt., up to 0.7% Rh by wt. of Bi seps. A eutectic corresponding to 0.7%
Rh m. 260°, i. e., 10° lower than the m. p. of pure Bi. In the next branch up to 1.8%

Rh, RhBi₂ seps. There is a transition point at 433° corresponding to 1.8% Rh, at which
RhBi₂ changes to RhBi₃. In the next branch RhBi₃ seps. and a new eutectic appears at
772°, corresponding to 10.81% Rh alloy. The next eutectic is at 995°, corresponding to
31.5% Rh. In the branch between 772° and 995°, the compd. RhBi seps. Twelve
micrographs show details of structure in support of the cooling diagram. Alloys contg.
2.5% Rh dissolve extremely slowly in cold dil. 1:4 HNO₃. More concd. acids and
heating accelerate the soln. of these alloys. Alloys contg. 5-18.3% Rh are sol. in aqua
regia, but those of higher Rh content are incompletely sol.   S. I. Marokosky

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

Vapor tension of the system: sodium sulfate-water. E. YA. RODE. Akad. Nauk U. S. S. R., Material No. 73(Karabugaz and its industrial importance, 3rd Ed.), 317–38(1930)).—General methods of vapor tension detn., properties of the system, Na₂SO₄–H₂O, and methods of studying its vapor tension.   ROBERT SCHLESS

METALLURGICAL LITERATURE CLASSIFICATION

Lead oxides and their reducibility with carbon. F. Ya Rook. J. Russ. Phys Chem. Soc. 62, 1419-42(1930).—The existence of 2 classes of lead oxides is established. To the first class belong oxides forming a series of solid solns. α, from PbO to PbO₁.₄ (content of active O from 0 to 6.47%). The color of these oxides varies from light to dark brown. To the second class belong lead oxides forming a series of solid solns β, from PbO₁.₅ to PbO₁.₆ (active O content from 2.2 to 6.24%), and solid solns. γ, from PbO to PbO₁.₃ (active O content from 0 to 0.1%). Between the β and γ series there is an interval from Pb₁.₄ to PbO₁.₅. The color of the oxides varies from dark brown in PbO₁.₄ to red in PbO₁.₅ and from light brown in PbO₁.₃ to yellow in PbO. The character of the bond of active O in all these oxides is of the zeolite type. Reduction with solid C is highly exothermic in the case of oxides rich in active O. Reduction takes place in 2 stages, of which the first probably corresponds to formation of a suboxide and the other to complete reduction. Oxides rich in active O contain some H₂O in the form of solid solns. The change of red lead oxide to yellow is not accompanied on the heating curve by any thermal effect.   S. L. MADORSKY

The nature of hydrates of iron oxide. E. YA. ROITR. *J. Russ. Phys.-Chem. Soc.* 62, 1443-52(1930).—An investigation was made of temp. dehydration curves of artificially prepd. iron oxide gel, of samples of granular lake-ore (Lake Pialo, Olonetzk Gov.), xanthosiderite, brown ore (Ural, Bakal) and of göthite. The results agree with previous investigations in regard to the existence of 3 classes of natural hydrates of iron oxide, α-, β- and γ-.   S. L. MADORSKY

Iron oxides and their reducibility with hydrogen and carbon. F. Ya. Room. *Russ. Phys.-Chem. Soc.* 62, 1453-66(1930).—The heating curve of Fe_2O_3 has a conversion point at 745°, quite likely corresponding to a definite modification of Fe_2O_3. Beginning with 1280° some irregularities are observed that probably have a connection with the beginning of loss of O_2. The temp. curve of reduction of Fe_2O_3 with H_2 has 2 kinks, probably corresponding to 2 steps in reduction, first to Fe_3O_4 and then to a lower oxide. There is no definite proof of formation of FeO as an intermediate product. Fe_2O_3 is more easily reduced with H_2 than Fe_3O_4. In reducing hydrated iron oxides with H_2 the point where reduction begins could not be ascertained, because it lies in the region of decompn. of corresponding hydrates. If the products of reduction are cooled in H_2 they become pyrophoric when the heating temp. does not exceed 600-650°. A higher heating temp. makes them non-pyrophoric. Reduction of Fe_2O_3 and hematite ore with C gives on the temp. curve 3 halts, probably corresponding to 3 consecutive stages of reduction to the metal. Here again Fe_2O_3 is more easily reduced than Fe_3O_4.

S. L. MADORSKY

Vapor tension in the systems: sodium sulfate-water and sodium carbonate-water. E. Ya. Rode. Inn. inst. anal. phys.-chim. (Leningrad) 6, 07-134(1933). — Vapor-tension curves were detd. for a series of temps. (5° to 51°) for the following systems: $Na_2SO_4.10H_2O$-soln.-vapor; Na_2SO_4-soln.-vapor; $Na_2SO_4.10H_2O-Na_2SO_4$-vapor; $Na_2CO_3.10H_2O$-soln.-vapor; $Na_2CO_3.7H_2O$-soln.-vapor; $NaCO_3.H_2O$-soln.-vapor; $Na_2CO_3.10H_2O-Na_2CO_3.7H_2O$-vapor; $Na_2CO_3.7H_2O-Na_2CO_3.H_2O$-vapor; $Na_2CO_3.H_2O-Na_2CO_3$-vapor. Isotherms of dehydration of Na_2SO_4 and Na_2CO_3 were detd. at 15° and 25°. The exptl. results were used for detg. transition points in these systems and for a theoretical calcn. of heats of hydration of these salts at various temps. Calcd. results are in good agreement with the exptl.   S. L. Madorsky

Alloys of palladium with silver. E. Ya. Roile. *Ann rcteur platine, Inst. chim. gén.* (U.S.S.R.) No. 13. 167–75(1936).—Pd and Ag form a continuous series of solid solns. Apparent discrepancies are due to adsorbed gases on the alloys.   H. M. Leicester

A.S.M.-S.L.A METALLURGICAL LITERATURE CLASSIFICATION

Physicochemical analysis of ferriferous chlorites from
certain Ural occurrences. E. Yu. Rode and T. V. Rode.
Bull. acad. sci. U. R. S. S., Classe sci. chim. 1940, 943-54
(in English, 954)   All the samples of ferriferous chlorites
that have been studied may be divided into 2 groups. On
heating curves of the first group 2 endothermic waves exist
and the second group has 3 endothermic waves. It is
shown that dehydration proceeds with a possible formation
of an intermediate hydrate while the first and last fractions
of water are being removed with a const. increase in temp.
Besides endothermic effects there are exothermic effects.
The first is due to oxidation of ferrous iron, but the nature
of others has not been detd.   Boris I. Rodzianko

A S a - S L A   METALLURGICAL LITERATURE CLASSIFICATION

RODE, YE. YA.

PA 54T26

USSR/Chemistry - Nontronite, Physical   Sep 1947
                                Properties of
     Chemistry - Minerals

"The Physical and Chemical Nature of Nontronite,"
Ye. Ya. Rode, T. V. Rode, $4\frac{1}{2}$ pp

"Izv Sektora Fiz-Khim Analiza" Vol XV

This mineral belongs to group of isomorphous miner-
als of "beydellit" series. General formula is
$R_2O_3 \cdot 3SiO_2 \cdot nH_2O$ where R is Al and Fe^{III}. Value of
n fluctuates between 2 and 6, but usually equals 5.
Relationship between Fe^{III} and Al also fluctuates.
Authors refer to work done by other scientists in
this field, and present some of their own observa-
tions. Submitted, 15 Dec 1940.
LC
                                              54T26

CA

2

Variable-composition compounds in the systems PbO·PbO$_2$, MnO-MnO$_2$, and Fe$_2$O$_3$-H$_2$O. E. Ya. Rode. *Izvsl. Sektora Fiz.-Khim. Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 16, No. 3, 19-28(1948).— An analysis of the heating curves and isobars of variable-O compds. of Pb and Mn, and of variable-H$_2$O Fe$_2$O$_3$ compds. On this basis the Pb and Mn oxides and the Fe$_2$O$_3$ hydrates are classed in groups and subgroups.   M. Hoseh

RODE, YEVGENIY YAKOVLEVICH; URAZOV, G.G., akademik, otvetstvennyy redaktor.

[Manganese oxides; artificial compounds, minerals and ores] Kislorodnye
soedineniia margantsa; iskustvennye soedineniia, mineraly i rudy. Moskva,
Izd-vo Akademii nauk SSSR, 1952. 397 p. (MLRA 6:5)

1. Akademiya nauk SSSR. Institut obshchei i neorganicheskoy khimii im.
N.S.Kurnakova.
(Manganese oxides)

Rode, Ye Ya

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry.   B-8
   Equilibrium. Physicochemical Analysis. Phase Transitions.

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7472

Author : Rode, Ye.Ya.
Title : Thermochemistry of the Oxygen Compounds of Manganese

Orig Pub : Tr. 1-go soveshchaniya po termografii, Kazan, 1953, M.-L.,
    Izd-vo AN SSSR, 1955, 219-238

Abstract : A short presentation of the results of the work of the
    author on natural and synthetic oxides and hyroxides of
    maganese. For a detailed presentation see the monograph
    of the author "Kislorodnyye soyedineniya margantsa. Is-
    kusstvennyye soyedineniya, mineraly i rudy" /Oxygen
    Compounds of Manganese. Synthetic Compounds, Minerals,
    and Ores_7, Izd-vo AN SSSR, 1952.

Card 1/1
          - 100 -

SOV/78-3-10-17/35

Physicochemical Investigations of Phospho-12(24)-Tungstic Acid

is stable within the temperature range of between 250 and 425°C.
A new compound is indicated by the respective thermograms and
X-ray analyses. $H_3[PW_{12}O_{40}]$ is water soluble, under the formation
of the above-mentioned hydrates. When heated up to more than
425°C, the compound decomposes under a complete decomposition
of the heteropoly acid. The respective thermogram indicates
that an endothermal effect is produced in the decomposition,
followed by an exothermal effect that indicates the crystal-
lization of tungsten oxide. There are 7 figures, 3 tables, and
18 references, 5 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
                Akademii nauk SSSR (Institute of General and Inorganic Chemistry
                imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: May 19, 1959

Card 2/2

AUTHORS: Rode, Ye. Ya., Ivanova, M. M.   SOV/78-3-10-18/35

TITLE: Physicochemical Investigations of Germanium-12-Tungstic Acid
                (Fiziko-khimicheskoye issledovaniye germaniye-12-vol'framovoy
                kisloty)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 10, pp 2333-2342
                (USSR)

ABSTRACT: The nature and properties of germanium-12-tungstic acid were
                investigated. In recent times, germanium heteropoly acid has
                become more and more important in analytical chemistry. The
                synthesis and investigation of germanium-12-tungstic acid was
                carried out by physico-chemical methods. The formation of
                germanium-12-tungstic acid with variable composition was de-
                termined in the isothermal dehydration by heating up to 250°C.
                The water contained in these hydrates is crystal water. It is a
                reversible dehydration process which does not lead to the de-
                composition of the heteropoly acid. The compound $2 H_2O \cdot GeO_2 \cdot$

                $12 WO_3$ is formed by heating germanium heteropoly acid at 250°C.

                It is difficult to separate water from this compound. The
Card 1/2   following structural formula was suggested: $H_4\left[GeW_{12}O_{40}\right]$. The

SCV/78-3-10-18/35

Physicochemical Investigations of Germanium-12-Tungstic Acid

compound is stable within the temperature range of from 250 to
350°C. It is water soluble, thus producing the above-mentioned
hydrates. The compound decomposes when heated to more than
350°C. The respective thermogram shows that an endothermal ef-
fect appears at 424-578°C. The final product resulting from
thermal decomposition is amorphous tungsten oxide which is
characterized by the occurrence of the exothermal effect at 500-
548°C. There are 7 figures, 4 tables, and 9 references, 4 of
which are Soviet.

SUBMITTED: May 19, 1958

Card 2/2

AUTHORS: Rode, Ye. Ya., Tverdokhlebov, V. N.   SOV/78-3-10-19/35

TITLE: Thermal Dissociation of Ammonium Molybdates (Termicheskaya dissotsiatsiya molibdatov ammoniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 10, pp 2343-2346 (USSR)

ABSTRACT: The process of the thermal dissociation of several ammonium molybdates was investigated. The initial preparations were produced according to the traditional methods. The ammonium molybdates produced have the following composition:

Nr Salt Composition %	1 Normal Molybdate	2 Paramolybdate
$(NH_4)_2O$	27,1	11,85
MoO_3	72,8	78,5
H_2O	–	9,6
Empirical Formula	$(NH_4)_2O \cdot MoO_3$	$(NH_4)_2O \cdot 2,35\ MoO_3 \cdot 2,35\ H_2O$
Gross Formula	$(NH_4)_2MoO_4$	$5\ (NH_4)_2O \cdot 12\ MoO_3 \cdot 12\ H_2O$

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SOV/78-3-10-19/35

Thermal Dissociation of Ammonium Molybdates

	3	4
Nr		
Salt	Paramolybdate	2,5-Molybdate
Composition%	(anhydrous)	
$(NH_4)_2O$	12,97	12,69
MoO_3	86,9	87,2
H_2O	-	-
Empirical Formula	$(NH_4)_2O.2,39\ MoO_3$	$(NH_4)_2O.2,48\ MoO_3$
Gross Formula	$5\ (NH_4)_2O.12\ MoO_3$	$2\ (NH_4)_2O.5\ MoO_3$
	5	6
Nr		
Salt	Metamolybdate	Metamolybdate
Composition%	(hydrous)	(anhydrous)
$(NH_4)_2O$	7,90	8,71
MoO_3	86,65	91,4
H_2O	5,40	-
Empirical Formula	$(NH_4)_2O.4MoO_3.2H_2O$	$(NH_4)_2O.4\ MoO_3$
Gross Formula	$(NH_4)_2O.4MoO_3.2H_2O$	$(NH_4)_2O.4\ MoO_3$

Card 2/4

Thermal Dissociation of Ammonium Molybdates   SOV/78-3-10-19/35

The thermal dissociation of ammonium molybdates was carried out
by the thermographic and thermogravimetric method, together
with the chemical analysis of the intermediate products. The
course of dissociation of various ammonium molybdates can be
carried out according to the following scheme:

$(NH_4)_2O.4\ MoO_3.2\ H_2O \xrightarrow{106-120^\circ} (NH_4)_2O.4\ MoO_3.H_2O \xrightarrow{145-155^\circ}$

$(NH_4)_2O.4\ MoO_3 \xrightarrow{320-370^\circ} MoO_3$

$5\ (NH_4)_2O.12\ MoO_3.12\ H_2O \xrightarrow{125^\circ} 5\ (NH_4)_2O.12\ MoO_3 \xrightarrow{220^\circ}$

$2\ (NH_4)_2O.5\ MoO_3 \xrightarrow{250-265^\circ} (NH_4)_2O.4\ MoO_3 \xrightarrow{320-373^\circ} MoO_3$

$(NH_4)_2O.MoO_3 aq \xrightarrow{76^\circ} m(NH_4)_2O.n\ MoO_3 \xrightarrow{93-105^\circ} m.(NH_4)_2On_1MoO_3 \rightarrow$

$\xrightarrow{145-160^\circ} 5(NH_4)_2O.12\ MoO_3 \xrightarrow{220^\circ} 2\ (NH_4)_2O.5\ MoO_3 \xrightarrow{250-265^\circ}$

Card 3/4 $(NH_4)_2O.4\ MoO_3 \xrightarrow{320-370^\circ} MoO_3.$
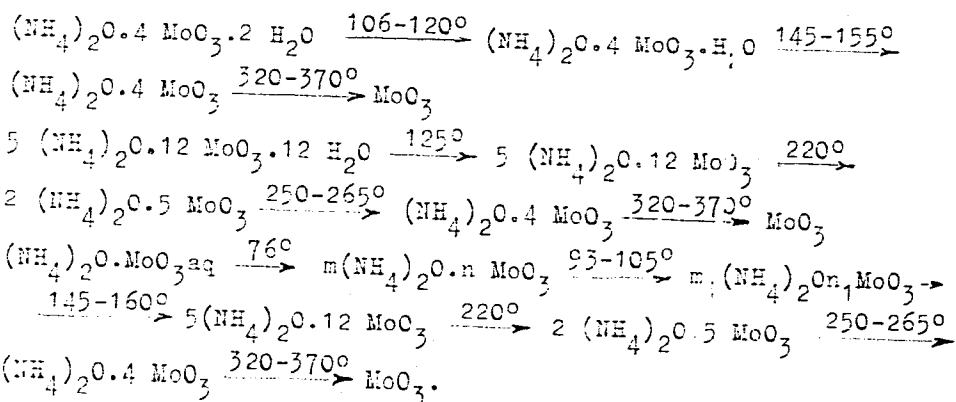
Thermal Dissociation of Ammonium Molybdates   S{V/78-3-10-19/35

The thermograms of various ammonium molybda es are presented
in the figures (1) and (2). Thus it is demorstrated that normal
molybdates, as well as paramolybdates, lose ammonia or water
at above 150°C when they are thermally treat d. Above this
temperature all dissociation products have the same composition.
The final product of dissociated ammonium mol bdates is amorphous
MoO$_3$ that is formed at 350°C and assumes crystalline form at
400-420°C. The results obtained are different from those mention-
ed in references. There are 2 figures, 1 table, and 4 references,
C of which is Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
               Akademii nauk SSSR (Institute of General and Incrganic Chemistry
               imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: May 19, 1958

Card 4/4

SOV/78-3-12-18/36

AUTHOR: Rode, Ye. Ya.

TITLE: The Nature of the Water in the Heteropoly Acids of Tungsten
            (Priroda vody v geteropolikislotakh vol'frama)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12,
            pp 2707-2715 (USSR)

ABSTRACT: The polythermal and isothermal decomposition of the heteropoly
            acids of tungsten were investigated using the physico-chemical
            methods of thermography, thermogravimetry, tensimetry, and
            X-ray analysis. The phosphoro-tungstic acid and the silico-
            tungstic heteropoly acids are characteristic and have typical
            differential thermograms. The number and the character of the
            thermal effects exhibited are dependent upon the water content
            and nature of the heteropoly acids as well as upon the con-
            ditions under which they are heated. The dehydration of phos-
            phoro-tungstic heteropoly acids with varying water content
            results in the formation of hydrates with constant and varying
            composition. In the investigation of phosphoro-tungstic
            heteropoly acids hydrates forming in the preparation with 61,
            45, 31 and 13 moles of water as well as phases with varying
            composition from 15.6 to 13 and 7 to 3 moles of water were found.

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SOV/78-3-12-18/36

The Nature of the Water in the Heteropoly Acids of Tungsten

Silico-tungstic acids with various water contents were also investigated, and thermal effects appear at 84-92°, 94-108°, and 218-248°C on their thermograms. The thermal effect at 218°-248° indicates the decomposition of the hydrate with 8 moles of water to form the water-free silico-tungstic acid $H_4[Si(W_{12}O_{40})]$.

This compound is stable up to 500°C, and at higher temperatures it decomposes to yield 2 moles of water. Silico-tungstic acids with 31, 24, 14 and 6 moles of water were determined using physico-chemical method. On the thermograms plotted exothermic effects appear at temperatures above 700°, which indicate the transition of amorphous tungsten trioxide into the crystalline state. There are 7 figures and 19 references, 8 of which are Soviet.

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Card 2/3

SOV/78-3-12-18/36

The Nature of the Water in the Heteropoly Acids of Tungsten

SUBMITTED: October 5, 1957

Card 3/3

AUTHOR: Rode, Ye. Ya.   20-119-5-31/59

TITLE: The Nature of Water in Heteropoly Compounds. Tungstic
               Heteropoly Acids (Priroda vody v geteropoliscyedineniyakh
               geteropolikisloty vol'frama)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 5,
               pp. 953-956 (USSR)

ABSTRACT: The author gives a survey of the general formulae of
               heteropoly acids. According to these formulae the basicity
               of these acids must be different. According to conditions
               with different amounts of water of crystallization these
               acids can be obtained as 6 series of crystallochemically
               different hydrates (reference 4). A theory on a special
               part played by the water molecules in aqueous (reference 5)
               and heteropoly compounds (ref 6) was set up. B. I. Spitsyn
               and collaborators (ref 7), however, neither succeeded in
               proving differences in the nature of linkage, nor the
               existence of "special" water molecules in these compounds.
               The opinions of scientists are also divided concerning the
               determined 2 thermal effects on the differential thermographs
Card 1/4   (refs 8 against 9). By means of different physico-chemical

The Nature of Water in Heteropoly Compounds.   20-109-5-31/59
Tungstic Heteropoly Acids

methods of analysis the author investigated several
heteropoly acids of tungsten and molybdenum together with
their salts. The data given here were obtained together
with M. P. Sokolova and N. A. Krotov. The investigated
preparations of phosphotungstic acid different degrees of
hydration have typical differential thermographs and
thermogravimetric polythermal lines of denydration
(= curves: water content - temperature). Curve 1 (figure 1)
corresponds to the thermograph of this acid with a total
water content x which was computed per molecule of the
residue $P_2O_5.24WO_3$, equal to 31,4 mole (n - 14,4). Curve 2
(figure 2) corresponds to the polythermal line of water
content x, computed from the percentage of loss of water
during heating. From the obtained results the author gains
the conviction that according to its physico-chemical nature
the water in these hydrates is a water of crystallization.
It is completely removed by heating to 250°C. This process
is reversible and does not lead to the decomposition of the
heteropoly acid. Of special interest is the formation of the
compounds $3H_2O.P_2O_5.24WO_3$ and $2H_2O.SiO_2.12WO_3$ determined by

~ora 2/4

The Nature of Water in Heteropoly Compounds.   20-119-5-31/59
Tungstic Heteropoly Acids

the author which, according to their composition,
correspond to anhydrous acids

$H_3 [P(W_3O_{10})_4]$ and $H_4 [Si (W_3O_{10})_4]$. The water separated

on their heating is physico-chemically different from water
of crystallization and must be classified with the
constitutional type which is more firmly bound. This water
apparently forms of hydrogen and oxonium ions (references 4,
11) due to an irreversible process of the decomposition of
substance. This process of decomposition is not exothermic,
but endothermic (as against reference 8).
There are 3 figures and 11 references, 4(6) of which are
Soviet.

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              Kurnakova Akademii nauk SSSR (Institute for General and
              Inorganic Chemistry imeni N. S. Kurnakov, AS USSR)

Card 3/4

The Nature of Water in Heteropoly Compounds.   20-119-5-31/59
Tungstic Heteropoly Acids

PRESENTED: October 5, 1957, by I. I. Chernyayev, Member, Academy of
               Sciences USSR

SUBMITTED: October 1, 1957

               :

Card 4/4

5 (2)

AUTHORS: Rode, Ye. Ya., Krotov, N. A.   SOV/78-4-8-13/43

TITLE: The Physico-chemical Investigation of Silico-12-Tungstic Acid
                (Fiziko-khimicheskoye izucheniye kremne-12-vol'framovoy
                kisloty)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8,
                pp 1782 - 1793 (USSR)

ABSTRACT: The authors give the publication data which are available on
                the compound mentioned in the title (Refs 1-19). This com-
                pound shows cis-trans-isomerism. On the basis of radiographic
                analysis its formula is $H_4[SiW_{12}O_{40}] \cdot nH_2O$. The compound was
                investigated in solid crystalline state at different degrees
                of hydration. Figures 1 - 3 show the thermographic analysis,
                figure 4 shows the polythermal lines of the preparations of
                different hydration, figure 5 the isothermal lines of decompo-
                sition, figure 6 the diagram composition - temperature and
                figure 7 the isothermal lines of vapor pressure for prepara-
                tions of different hydration. The results may be summarized as
                follows: at 40 - 44° a liquefaction and decomposition of the
Card 1/2   hydrate with n = $33H_2O$ takes place. The hydrate is formed with

The Physico-chemical Investigation of Silico-12-   SOV/78-4-8-13/43
Tungstic Acid

$n = 26H_2O$. At $44 - 50^\circ$ it decomposes into the hydrate with $19H_2O$, at $74 - 76^\circ$ a complete homogeneous dissolution takes place. At $108 - 114^\circ$ the exothermal separation of crystals of $16H_2O$ hydrate takes place. At $115 - 117^\circ$ the dissociation of this hydrate begins under formation of the compounds $2H_2O.SiO_2.12WO_3$. This compound decomposes at $400 - 478^\circ$ under the formation of WO_3 among other compounds. The exothermal effect at $505 - 530^\circ$ corresponds to the crystallization of the separated WO_3. These results are compared with those found by other scientists. There are 7 figures, 3 tables, and 25 references, 6 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)
SUBMITTED: November 12, 1958
Card 2/2

S/078/61/006/005/012/015
B121/B208

AUTHORS: Rode, Ye. Ya. and Lebedev, B. A.

TITLE: Physico-chemical investigation of rhenium sulfides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 5, 1961,
            1198 - 1203

TEXT: Re_2S_7 was obtained by precipitation with hydrogen sulfide from a
hydrochloric acid potassium perrhenate solution in the following way: A
homogeneous stream of hydrogen sulfide was passed for 3 - 4 hr through a
solution of $KReO_4$ (5 g in 2.7 l water and 1.3 l concentrated hydrochloric
acid) at 80 - 90°C, to cool the solution. The precipitate was allowed
to stand over night, and decanted some times with cold water saturated
with hydrogen sulfide. The precipitate was filtered off, washed with hot
water, and dried in the vacuum exsiccator over concentrated sulfuric acid.
A dark-brown powder with variable composition was obtained. The prepa-
ration synthesized was examined by thermographic, thermogravimetric, and
X-ray analysis. It may be seen from the thermographic analysis that the

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Physico-chemical investigation ...   S/078/61/006/005/012/015
                                                    B121/B208

first endothermic effect appears at 35 - 110°C, which indicates the re-
lease of hygroscopic and not firmly bound water. The second endothermic
effect appears at 156 - 280°C indicating a further release of water and
the decomposition of rhenium heptasulfide. The thermogram of rhenium hep-
tasulfide dried over sulfuric acid in the vacuum exsiccator shows only
one endothermic effect at 120 - 230°C. At higher temperatures no other
thermal effects occur. At 400°C decomposition of the compound sets in
forming ReS_2. At higher temperatures a continuous decomposition of Re_2S_7
takes place, at 800°C the decomposition product has the composition $ReS_{2,08}$.
Intermediates of a composition between Re_2S_7 and ReS_2 were not found to
be formed. The rhenium heptasulfide obtained by the wet method is amor-
phous in the X-ray pictures, only after a heat treatment at about 400°C
crystallization products of ReS_2 were found. The crystallization of rhe-
nium disulfide obtained by thermal decomposition of Re_2S_7 begins at 400°C
and proceeds more slowly than the crystallization of MoS_2. P. A. Koz'min
assisted in this work. There are 4 figures, 2 tables, and 17 references:
2 Soviet-bloc and 15 non-Soviet-bloc. The references to English-language

Card 2/3

Physico-chemical investigation ...

S/078/61/006/005/012/015
B121/B208

publications read as follows: Ref. 5, H. V. Briscoe, P. L. Robinson, E. M. Stoddart, J. Chem. Soc. (London), 1439 (1931). Ref. 11, R. W. Wyckoff, Crystal Structures, 1948, v. 1, p. 15.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: June 2, 1960

Card 3/3

S/078/61/006/005/011/015
B121/B208

AUTHORS: Rode, Ye. Ya. and Lebedev, B. A.

TITLE: Physico-chemical study of molybdenum trisulfide and of the
            products resulting from its thermal decomposition

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 5, 1961,
            1189 - 1197

TEXT: Molybdenum trisulfide preparations and the products resulting from
its thermal decomposition were studied by physico-chemical methods. The
preparations synthesized were subjected to chemical, thermographic, ther-
mogravimetric and X-ray analysis, and the diagram composition versus tem-
perature was studied. The thermograms were recorded on a Kurnakov pyro-
meter with differential recorder. The preparations were synthesized by
the following methods: a) saturation of the hydrochloric acid solution
of ammonium molybdate with hydrogen sulfide, b) treatment of the aqueous
solution of ammonium thiomolybdate with hydrochloric acid, c) treatment
of crystalline thiomolybdate piperazine with dilute hydrochloric acid so-
lutions, d) dry method - by thermal decomposition of pure ammonium tetra-

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Physico-chemical study of ...

S/078/61/006/005/011/015
B121/B208

thiomolybdate at 190 - 200°C in the absence of oxygen. The preparations of molybdenum trisulfide obtained by the wet method contain more sulfur than corresponds to their stoichiometric composition (up to $MoS_{3,7}$). Extraction with carbon disulfide reduces the sulfur content to $MoS_{3,3}$. The molybdenum sulfide prepared by the dry method contains less sulfur than the preparations obtained by the wet method. Thermograms and thermogravimetric analyses indicate that the aqueous molybdenum sulfide preparations, when heated to 250°C in oxygen-free atmosphere, are completely dehydrated and partly release the excess sulfur. At temperatures of 250-400°C MoS_3 is decomposed forming intermediate products the end product of which is MoS_2. X-ray phase analysis disclosed that at 300°C amorphous products result from the thermal decomposition of the preparation of no. 1 obtained by treating ammonium thiomolybdate solution with hydrochloric acid. At 350°C X-ray lines of crystalline MoS can already be observed in these products. The X-ray analysis of preparation 9 which was obtained by treating thiomolybdate piperazine with hydrochloric acid indicated that this preparation is also amorphous up to 200°C, so that the term "crystalline molybdenum trisulfide"

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Physico-chemical study of ...

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B121/B208

seems to be incorrect. It differs from the usual preparations in that thermal decomposition sets in already at a temperature of 190°C under the formation of new phases. The crystallization process of MoS_2 resulting from the thermal decomposition of molybdenum trisulfide proceeds in two stages. First a rhombohedral modification of MoS_2 is formed which then passes over into a hexagonal stable modification on continuous heat treatment at 600°C. Molybdenum disulfide obtained by the method of M. Guichard (Ref. 7: Ann. chim. phis. 7, 23, 557 (1901)) by thermal decomposition of ammonium molybdate and sulfur in the presence of potash contains both rhombohedral and hexagonal MoS_2 modifications which was confirmed by X-ray analysis. P. A. Koz'min is thanked for his interest in these studies. Papers by L. Sokol (Ref. 31: Sb. chekhoslovatskikh khimicheskikh rabot, 1956, razdel "Khimiya", t. 21, no. 5, str. 1140) and A. N. Zelikman, L. V. Belyayevskaya (Ref. 25: Zh. neorgan. khimii, 1, 2239 (1956)) are mentioned. There are 5 figures, 3 tables, and 31 ref rences: 8 Soviet-bloc and 23 non-Soviet-bloc. The four most recent references to English-language publications read as follows: Ref. 18: R. L. Bell, R. E. Her-

Card 3/4

Physico-chemical study of ...   S/078/61/006/005/011/015
                                    B121/B203

fert, J. Amer. Chem. Soc., 79, 3351 (1957); Ref. 19 R. G. Dickinson,
L. Pauling, J. Amer. Chem. Soc., 45, 1466 (1923); Ref. 24 F. Jellinek,
G. Brauer, H. Müller, Nature (London), 185, 376 (1960); Ref. 26: P.
Cannon, Nature (London), 183, 1612 (1959).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
               Kurnakova Akademii nauk SSSR
               (Institute of General and Inorganic Chemistry imeni N. S.
               Kurnakov of the Academy of Sciences USSR)

SUBMITTED: June 2, 1960

Card 4/4

RODE, Ye, Ya.; LEBEDEV, B.A.

Physiocochemical study of molybdenum trisulfide and of the products
of its thermal decomposition. Zhur.neorg.khim. 6 no.5:1189-1197
My '61.   (MIRA 14:4)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Molybdenum sulfide)

RODE, Ye, Ya.; LEBEDEV, B.A.

Physiocochemical study of rhenium sulfides. Zhur.neorg.khim. 6
no.5:1198-1203 My '61.   (MIRA 14:4)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.
                    (Phenium sulfide)

RODE, Ye.Ya.; GOLOVLEVA, Z.S.; KUZNETSOV, V.G.; KOZ'MIN, P.A.

Physicochemical study of hydratrd peroxide compounds of uranium.
Zhur.neorg.khim. 6 no.12:2635-2648 D '61.   (MIRA 14:12)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova,
AN SSSR.
(Uranium oxide)

S/020/62/145/002/013/018
B106/B101

AUTHORS: Rode, Ye. Ya., and Lysanova, G. V.

TITLE: Synthesis and physicochemical investigation of oxygen
             compounds in the system MoO_3 - MoO_2.

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 2, 1962, 351-354

TEXT: Composition, nature, and formation processes of the individual
phases in the system MoO_3 - MoO_2 were investigated by differential thermal
analysis, X-ray phase analysis, and measurements with a transmission
microscope and a direct-light microscope. Preparations produced by mixing
MoO_3 and either MoO_2 or Mo, and by subsequent annealing, were studied as
well as samples produced by partial reduction of MoO_3 with hydrogen at
450-$600^{\circ}C$ or by dehydrating molybdenum hydroxides with a low degree of
oxidation in an inert atmosphere at 450-$500^{\circ}C$ to increase the activity
of the formation reaction. These samples were annealed until equilibrium
was established. Four intermediate phases with individual thermographs,

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S/020/62/145/002/013/018
B106/3101

Synthesis and physicochemical ...

radiographs, and optical properties were found in the samples annealed at
500-850°C: (1) $MoO_{2.89}$ (triclinic) forms at 650-740°C and is identical
to the ζ-oxide; (2) $MoO_{2.89}$ (monoclinic) forms at 750°C and is analogous
to the β'-oxide; (3) $MoO_{2.75}$ (monoclinic) forms at 500-600°C and is
identical to the η-oxide; (4) $MoO_{2.75}$ (orthorhombic) forms at 610-700°C
and is identical to the γ-oxide (see L. Kihlborg, Acta Chem. Scand., 13,
954 (1959)). Other individual phases described in publications, were not
found under the conditions chosen. The η and β' phases in contrast to
γ and ζ phases form only by long-term annealing of MoO_3 - Mo or MoO_3 - MoO_2
mixtures of certain ratios. The γ-phase forms by reaction of the initial
MoO_3 and MoO_2 components in solid state. The ζ-phase forms by reaction
of MoO_3 with the γ-phase. The formation of the two other phases is not
indicated by thermal effects. Comparison of the radiographic data I and
$sin^2θ$ of the four phases with publications (A. Magneli, G. Andersson et al.,

Card 2/3

Synthesis and physicochemical ...

S/020/62/145/002/013/018
B106/B101

Anal. Chem., 24, 1998 (1952)) showed good agreement of the $sin^2\theta$ values, but differences in the intensities I in some lines. There are 4 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

PRESENTED: December 25, 1961, by I. V. Tananayev, Academician

SUBMITTED: December 15, 1961

Card 3/3

RODE, Ye.Ya.; LYSANOVA, C.V.

Synthesis and physicochemical study of reduced hydroxide compounds of molybdenum. Dokl.AN SSSR 145 no.3:573-576 Jl '62.

(MIRA 15:7)

1. Institut obshchey i neorganicheskoy khimii imeni N. .Kurnakova AN SSSR. Predstavleno akademikom I.V.Tananayevym.

(Molybdenum hydroxide)

RODE, Ye.Ya.; KROTOV, N.A.

Tetrasubstituted lithium salt of silico-12-tungstic acid.
Zhur.neorg.khim. 8 no.4:939-949 Ap '63.   (MIRA 16:3)

1. Institut obshchey i neorganicheskoy khimii imeni M.S.Kurnakova
AN SSSR.
          (Lithium compounds) (Silicotungstic acid)

KROTOV, N.A.; RODE, Ye.T.

Acid lithium salts of silico-12-tungstic acid. Zhur. neorg.
khim. 8 no.7:1722-1736 Jl '63.   (MIRA 16:7)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.
            (Silicotungstic acid)   (Lithium salts)

RODE, Ye.Ya.; SOKOLOVA, M.P.

Trisubstituted sodium salt of phospho-12-tungstic acid. Zhur.
neorg. khim. 8 no.8:1883-1890 Ag '63.   (MIRA 16:8)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova
AN SSSR.
        (Phosphotungstic acid)   (Sodium salts)

ROIE, Ye.Ya.; GOLOVLEVA, Z.S.; KUZNETSOV, V.G.; KOZ'MIN, P.A.

Hydrated compounds in the system uranium trioxide – water. Zhur. neorg. khim. 8 no.12:2751-2772 D '63.   (MIRA 17:9)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR.

L 20681-65 - EWT(m)/EWP(b)/EWP(t) IJP(c) JD/JG
S/0078/64/009/009/2068/2075

ACCESSION NR: AP4044806

AUTHOR: Rode, Ye. Ya.; Lebedev, B. A.

TITLE: Tungsten sulfides

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 9, 1964, 2068-2075

TOPIC TAGS: tungsten sulfide, tungsten trisulfide, tungsten disulfide, ammoni-
um thiotungstate, ammonium thiotungstate, catalyst

ABSTRACT: The thermal decomposition of ammonium thiotungstate was investi-
gated in an inert and in a reducing atmosphere. The WS_3 obtained as an interme-
diate product by thermal decomposition at 280C in nitrogen differed from the WS_3
formed by precipitation of ammonium thiotungstate with HCl in that it did not con-
tain sulfur and oxygen-compounds of tungsten. The thermograms for this WS_3
showed a gradual endotherm beginning at 250C, attributed to simultaneous decom-
position of WS_3 and vaporization of the sulfur, and an exotherm at 330C, when the
WS_3 crystallized. No other thermal effects were observed up to 700C. X-rays
showed decomposition of ammonium thiotungstate was only partial at 280C and
Card 1/3

L 20681-65

ACCESSION NR: AP4044806

that WS_2 started to form at 360C. WS_3 dissociated, starting at about 300C, to form WS_2 containing excess sulfur ($WS_{2.29}$) characterized by disordered crystalline structure. The end product of decomposition in inert atmosphere at 1000C was WS_2 of stoichiometric composition with the ordinary hexagonal crystalline structure of the molybenite (MoS_2) type. Thermally stable decomposition products intermediate between WS_3 and WS_2 were not observed. The decomposition of ammonium thiotungstate in a hydrogen current was conducted from 100-1000C. There was no decomposition at 150C; an amorphous material containing WS_2 with a small excess of sulfur was obtained at 200C. It was suggested that this material might have better catalytic properties than WS_2 obtained at 400C. Stoichiometric WS_2, characterized by disordered structure, was stable in the hydrogen atmosphere at 300-650C. The decomposition product obtained at 700C was poor in sulfur in comparison to WS_2 and was monophasic with disordered structure of behavior similar to WS_2. Starting at 800C the decomposition products were mechanical mixtures of WS_2 and W; at 1000C the product was practically all metallic tungsten. No compounds of intermediate composition between WS_2 and W, as suggested by S. M. Samoylov (Izv. AN SSSR. Otd. khim. n., vy*p. 8, 1416

Card 2/3

L 20681-65
ACCESSION NR: AP4044806   2

(1961)) were established in the hydrogen current thermal decomposition of the
ammonium thiotungstate. "L. Z. Gokhman took part in the work." Orig. art.
has: 6 figures and 2 tables

ASSOCIATION: Institut obshchey i neorganicheskoy khimii ini. N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of
Sciences SSSR)

SUBMITTED: 13Jun63   ENCL: 00

SUB CODE: GC, IC   NO REF SOV: 005   OTHER: 011

Card 3/3

L 25081-65   EWT(1)   IJP(c)

ACCESSION NR: AP5003447   S/0181/65/007/001/0274/0276

AUTHORS: Rodichev, A. M.; Khlebopros, R. G.

TITLE: Concerning allowance for magnetoelastic coupling in the motion of a magnetic moment

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 274-276

TOPIC TAGS: magnetic moment, magnetoelastic coupling, crystal lattice magnetization, friction field

ABSTRACT: The authors determine the effective inertia and friction fields which occur during the motion of a "rigid" magnetic moment, and which are due to the magnetoelastic coupling between the homogeneous magnetization and the lattice. The interaction between the spin waves and the lattice is disregarded. The motion of the magnetic moment in a thin round plate (film), a hollow thin-wall cylinder, and in a sphere is considered. An analysis of the derived

Card   1/2

L 25081-65
ACCESSION NR: AP5003447

equations shows that the dependence of the friction field on the frequency has a resonant character. For films on thin-wall cylinders with linear dimensions of approximately 1 cm, the resonant frequency is 10^6--10^7 sec^{-1}, and for a ferrite sphere with 0.1 cm radius, the frequency is 10^7 sec^{-1}. In the case of pulsed reversal of magnetization, the values obtained for the friction and inertia fields are small and do not determine the experimentally observed reversal of magnetization time. It is also shown that the friction field in a sphere amounts to 10^{-14} Oe at the frequencies of ferromagnetic resonance, so that the line width of ferromagnetic resonance is not due to energy transfer directly from the inhomogeneous precession to the lattice. Orig. art. has: 10 formulas.

ASSOCIATION: Institut fiziki SO AN SSSR, Krasnoyarsk (Institute of Physics, SO AN SSSR)

SUBMITTED: 12Jun64   ENCL: 00   SUB CODE: EM, SS

NR REF SOV: 007   OTHER: 001

Card   2/2

IVANOVA, M.M.; RODE, Ye.Ya.

Trisubstituted lithium tungstogermanate. Zhur.neorg.khim.
11 no.1:223-225 Ja '66.   (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR. Submitted June 15, 1965.

L 09312-67   EWT(m)/EWP(t)/ETI__ IJP(c)___JD/JG

ACC NR: AP6029830   SOURCE CODE: UR/0363/66/002/008/1527/1528

26

AUTHOR: Rodo, Yo. Ya.; Karpov, V. N.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of
Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Phase diagrams of the systems $Na_2WO_4-SrWO_4$ and $Na_2W_2O_7-SrWO_4$

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 8, 1966, 1527-1528

TOPIC TAGS: strontium compound, sodium compound, tungstate, phase diagram, X ray
analysis

ABSTRACT: The phase diagram of the $Na_2WO_4-SrWO_4$ system was obtained from heating
curves of annealed mixtures of the initial components present in various proportions
(see Fig. 1). Cooling and reheating curves were also taken into account. X-ray phase
analysis of both the initial pure compounds and annealed mixtures was used to confirm
the diagram. From the latter it follows that no compounds are formed in this system,
and that the system has a degenerate eutectic whose composition and melting point are
close to those of sodium tungstate. A similar phase diagram of the $Na_xW_2O_7-SrWO_4$
system (see Fig. 2) also showed the presence of a degenerate eutectic. Pure Na_2WO_4
and $Na_2W_2O_7$ as well as eutectics formed by these compounds with $SrWO_4$ solidify with
considerable supercooling. Orig. art. has: 2 figures.

Card   1/3   UDC: 541.123.2

L 09312-67
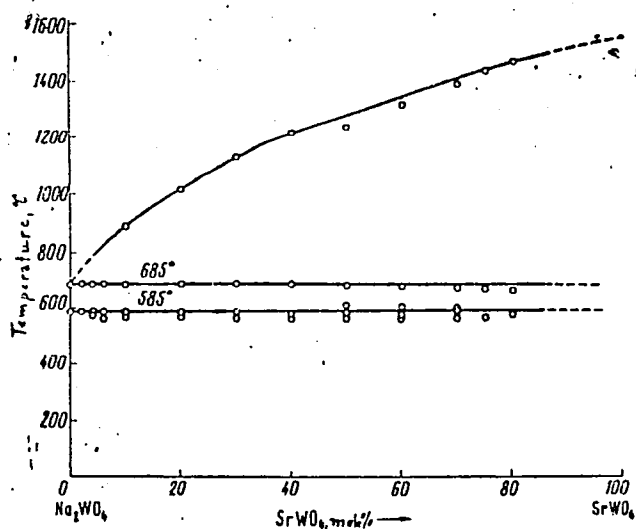ACC NR: AP6029830

Fig. 1. Phase diagram of the Na_2WO_4-$SrWO_4$ system
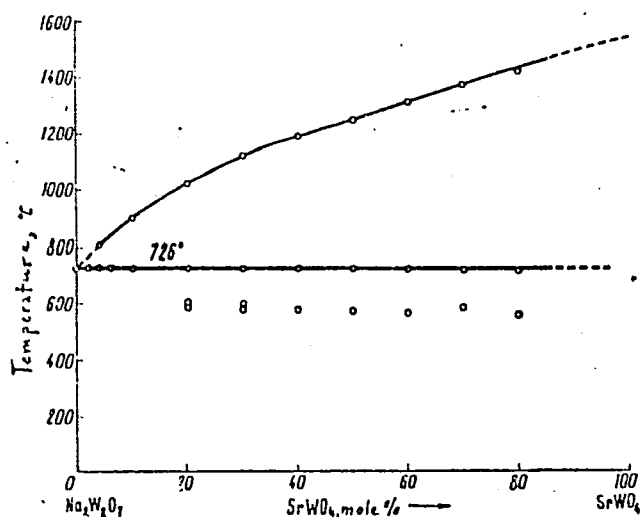
2/3

L. 09312-67
ACC NR: AP6029830

Fig. 2. Phase diagram of the $Na_2W_2O_7-SrWO_4$ system

Card   3/3

L 32054-66   EWP(e)/EWT(m)/T/EWP(t)/ETI   IJP(c)   JD/JG/AT/AH

ACC NR: AP6013348   SOURCE CODE: UR/0363/66/002/004/0683/0687

AUTHOR: Rode, Ye. Ya.; Karpov, V.N

ORG: Institute of General and Inorganic Chemistry im. N.S. Kurnakov, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akad. nii nauk SSSR)

TITLE: Phase diagram of the system WO_3—Nd_2O_3

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 683-687

TOPIC TAGS: tungsten compound, neodymium compound. tungstate, phase diagram

ABSTRACT: The phase diagram of the WO_3—Nd_2O_3 system was constructed (see Fig. 1) from heating curves of annealed mixtures of initial components of various compositions. Cooling and reheating curves of the latter were also considered. X-ray phase analysis of both the pure compounds formed and their mixtures confirmed the diagram obtained. In addition to the normal neodymium tungstate $Nd_2(WO_4)_3$ and 1:1 oxytungstate Nd_4WO_6 described earlier, three more compounds were found to form in this system: 1:2 oxytungstate $Nd_2W_2O_9$, 2:1 oxytungstate Nd_4WO_9, and 3:1 oxytungstate Nd_6WO_{12}. M P. Sokolova participated in the experimental part. The authors thank V. G. Kuznetsov for his attention and interest in this work. Orig. art. has: 1 fig. and 1 table.

SUB CODE: 07, 11 / SUBM DATE: 11Jun65 / ORIG REF: 001 / OTH REF: 016

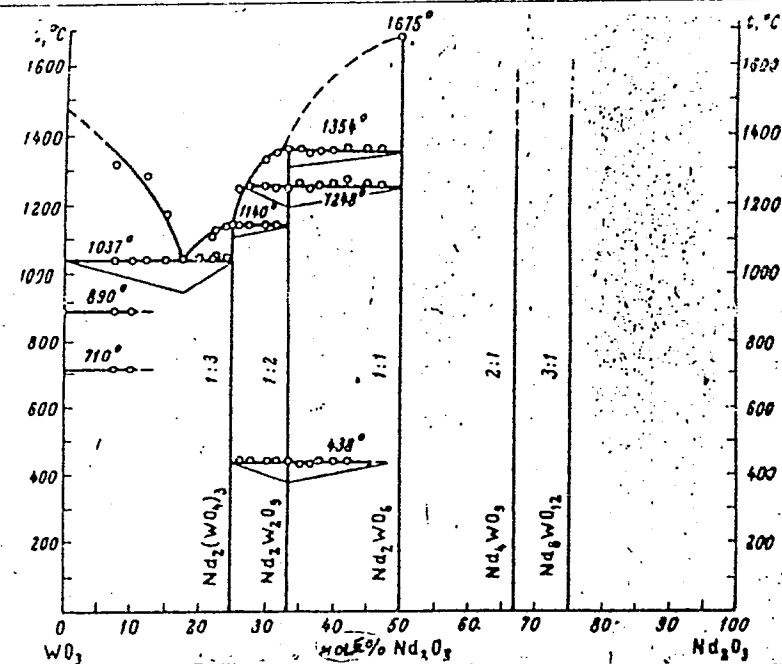UDC 546.786+546.657

Card   1/2

L 32054-66

ACC NR: AP6013348

Fig. 1. Phase diagram of the WO_3—Nd_2O_3 system

Card   2/2

L 32055-66   EWP(e)/EWT(m)/T/EWP(t)/ETI   IJF(c)   JD/JG/AT/WH

ACC NR: AP6013349   SOURCE CODE: UR/0363/66/002/004/0688/0692

AUTHOR: Rode, Ye. Ya.; Karpov, V. N.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Phase diagram of the system $Nd_2(WO_4)_3$-Na_2WO_4

SOURCE: AN SSSR Izvestiy Neorganicheskiye materialy, v. 2, no. 4, 1966, 688-692

TOPIC TAGS: neodymium compound, tungstate, phase diagram

ABSTRACT: The phase diagram of the $Nd_2(WO_4)_3$-Na_2WO_4 system was constructed (see fig. 1) by plotting the heating curves of annealed mixtures of initial components of various compositions. Cooling and reheating curves of the latter were also taken into account. The diagram and the characteristics of the phases formed were confirmed by x-ray phase analysis of the pure compounds formed and their mixtures. The diagram showed that only two compounds, $NaNd(WO_4)_2$ (1:1 compound) and $Na_5Nd(WO_4)_4$ (5:1 compound), are formed in this system. The 1:1 compound melts at 1263C and forms solid solutions (probably substitutional ones) with neodymium tungstate. The 5:1 compound melts incongruently at 735C; with sodium tungstate, it forms a eutectic close in composition to the ordinate Na_2O_4 with a melting point of 686C. It is suggested that the addition of sodium tungstate to a rare earth tungstate orders the structure of the latter. On the basis of the diagram obtained, the crystallization of $Na_5Nd(WO_4)_4$ from Na_2WO_4 melt was

Card 1/3   UDC 546.657'786+546.33'786

L 32055-66

ACC NR: AP6013349
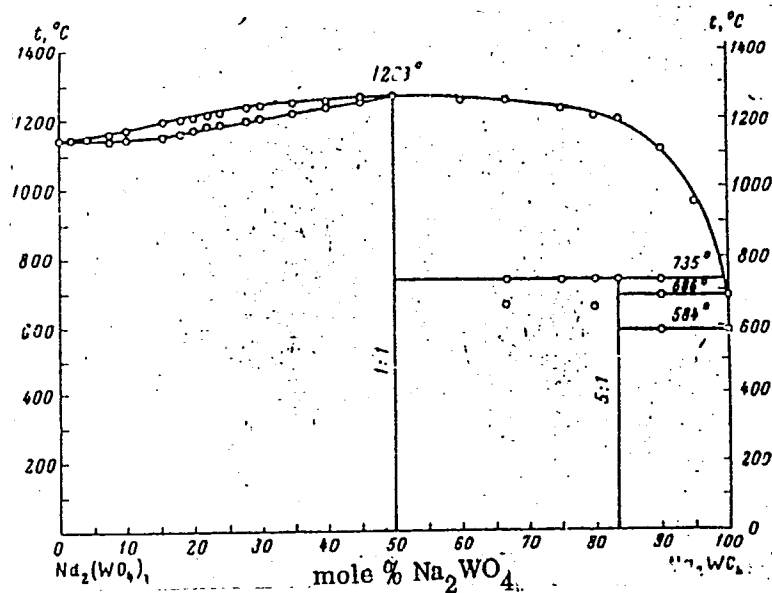

Figure 1. Phase diagram of the $Nd_2(WO_4)_3$–Na_2WO_4 system

Card 2/3

L. 32055-66

ACC NR: AP6013349

carried out at 720—680C. M. P. Sokolova participated in the experimental part of the work. The authors thank V. G. Andrianov and A. I. Gusev, of the Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii), for assistance in carrying out the x-ray phase analysis of the system studied, and A. A. Yeliseyev, on the staff of IONKh AN SSSR im. N. S. Kurnakov, who took an active part in the discussion of the results. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07 / SUBM DATE: 11Sep65 / OTH REF: 010

Card 3/3

SPERANSKAYA, Ye.I.; SKORIKOV, V.M.; RODE, Ye.Ya.; TEREKHOVA, V.A.

Phase diagram of the system bismuth oxide – ferric oxide. Izv.
AN SSSR. Ser. khim. no.5:905-906 '65.   (MIRA 18:5)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova
AN SSSR.

RODEANU, E.

Third International Quantum Electronics Conference, Paris,
February 11-15, 1963. Studii cerc fiz 15 no. 3:371-372 '64.

GHEORGHIU, Octav, C.; BULARANU, Emil I.

Study of changing the resonance frequency and the factor of quality due to the introduction of a perturbatory element in a coaxial cavity. Studii cerc fiz 14 no.4:399-419 '63.

1. Institutul de fizica Bucuresti.

NISTOR, Octavian, ing.; RODEANU, Emil, ing.

Measurements of tunnel diodes. Telecomunicatii 7 no.6:246-249
N-D '63.

RODEANU, Emil, ing.

Tunnel diodes. Telecomunicatii 7 no.5:209-215   S-0'63

NISMON, Octavian, Engr; RODEANU, Emil, Engr.

Bucharest, Telecomunicatii, No 6, Nov-Dec 65, pp 246-249

"Measurements on Tunnel Diodes."

L 1211-66   EWA(h)

ACCESSION NR: AP5025829

RU/0005/65/000/005/0158/0159

AUTHOR: Rodeanu, Emil (Engineer)

TITLE: Low-frequency wide-band high-linearity discriminator

SOURCE: Telecomunicatii, no. 5, 1965, 158-159

TOPIC TAGS: frequency discriminator, circuit theory, signal frequency

ABSTRACT: The author discusses alternative methods for linearizing the characteristics of a wide-band R-C discriminator which was recently described in U.S. technical literature. Orig. art. has: 3 figures and 8 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: EC

NR REF SOV: 000

OTHER: 003

JPRS

Card 1/1

L 36195-66 EWT(1)   IJP(c)

ACC NR: AP6011449   SOURCE CODE: UR/0109/66/011/004/06?./?.?2

AUTHOR: Rodeanu, E. I.; Mandake, S. G.

ORG: none

TITLE: Selecting the cavity resonator and sphere radius in the measurements of tensor susceptibility of ferrites

SOURCE: Radiotekhnika i elektronika, v. 11, no. 4, 1966, 684-692

TOPIC TAGS: ferrite, magnetic susceptibility, SHF

ABSTRACT: The tensor susceptibility of ferrites (in SHF plus constant magnetic field) has been measured by disturbing the field inside a resonator by a small ferrite specimen. The article offers criteria for selecting the shape and size of the resonator, mode, and the spherical specimen radius. It is found that the cylindrical resonator yields better results than the rectangular; the cylinder

Card 1/2   UDC: 621.372.413:621.317.412:621.318.134

L 36195–66
ACC NR: AP6011449

diameter-to-altitude ratio should be so selected that the ferrite sphere placed in two definite points inside the cylinder causes equal small disturbances to the magnetic field. These points have a minimum electric field. Only the modes corresponding to 1 - 1, where 1 is the exponent in a Bessel function (A. Angot, Compl. de mathématiques, Paris, 1957, p. 361), are recommended; the TM_{112} mode is the most suitable. Curves for TE_{112} and TM_{112} are supplied for selecting the ferrite sp..ere radius. Orig. art. has: 3 figures and 45 formulas.

SUB CODE: 09 / SUBM DATE: 29Dec64 / ORIG REF: 002 / OTH REF: 014

Card 2/2 mLP

ACC NR: AP6020351   SOURCE CODE: RU/0003/65/016/008/0372/0377

AUTHOR: Rodeanu,

ORG: Chemical Works, Turda (Uzinele Chimice)

TITLE: Studies concerning the evaporation, concentration and melting of caustic
soda lyes in descending liquid layer

SOURCE: Revista de Chimie, v. 16, no. 8, 1965, 372-377

TOPIC TAGS: sodium hydroxide, heat transfer

ABSTRACT: After a brief discussion of the evaporation, concentration and melting
of caustic soda lyes in films, the author presents the results of pilot stage tests of
these processes in descending liquid layers. The technological process was found
advantageous under the proper thermal conditions. The basic heat transfer considera-
tions in the design of industrial installations of this nature are also discussed.
Orig. art. has: 9 figures, 3 formulas and 3 tables. [Based on author's Eng. abst.]
[JPRS]

SUB CODE: 07, 20 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 008
SOV REF: 002

Card 1/1 ULR   UDC: 661.332.11.047.59.001.6

Rodeanu, R.

4

Markov chain 16

Statistics 16

Rodeanu, R. Sur un théorème ergodique concernant les chaînes de Markov. Rev. Univ. "C. I. Parhon" Politehn. Bucureşti. Ser. Şti. Nat. 4 (1955), no. 8, 39–42. (Romanian. Russian and French summaries) Let $P(t_1, x, t_2, A)$ be the probability that a Markov process in state x at time t_1 will be in a state of the set A at time t_2. Suppose that there are times $t_1 < t_2 < \cdots \to \infty$ and corresponding values $\alpha(t_1), \alpha(t_2), \ldots$ with $\Sigma \alpha(t_j) = \infty$ such that, for any decomposition of the state space into two disjunct sets A_1, A_2, $\max_j \inf_x P(t_{j-1}, x, t_j, A_j)$ for all j. It is shown that then, for each t,

$$\lim_{s \to \infty} |P(t, x, s, A) - P(t, y, s, A)| = 0$$

uniformly as x, y, A vary. [This statement differs slightly from that of the author, which seems to be inexact.]

J. L. Doob (Urbana, Ill.).

GOMULKA, Marian Jerzy; KAMIENSKI, Roman; RODECKI, Andrzej

Capillary permeability in cases of simple and toxic goiters before operations and several days after surgery. Polski tygod. lek. 12 no.38: 1454-1457 16 Sept 57.

1. (Z III Kliniki Chirurgicznej A. M. w Krakowie, kierownik: prof. dr Jerzy Jasienski). Adres: Krakow, ul. Pradnicka 37 III Klinika Chirurgiczna A. M.
       (GOITER, surgery,
          preop. & postop. capillary permeability (Pol))
       (HYPERTHYROIDISM, surgery,
          same)
       (CAPILLARY PERMEABILITY, in various diseases,
          hyperthyroidism & simple goiter, preop. & postop. changes
          (Pol))

LENCZYK, Maria; CHABINKA, Wojciech; GEDLICZKA, Otmar; JASIENSKI, Stefan; LIBMAN,
K.; HOSEK, H.; OSZACKI, Jan; RODECKI, A.

Statistical analysis of cases of cancer of the stomach treated in
Cracov in the years 1947-1956. Polski tygod. lek. 14 no.14:615-618 6
Apr 59.

1. (Z Instytutu Onkologii w Krakowie; dyrektor: doc. dr med. Hanna
Kolodziejska, z I Kliniki Chirurgicznej A.M. w Krakowie; kierownik:
prof. dr med. J. Bogusz, z II Kliniki Chirurgicznej A. M. w Krakowie;
kierownik: prof. dr med. K. Michejda i z III Kliniki Chirurgicznej
A. M. w Krakowie; kierownik: prof. dr med. J. Jasienski) Krakow, ul.
Garncarska 11 Instytut Onkologii.
            (STOMACH NEOPLASMS, statist.
                in Poland (Pol))

KAMIENSKI, Roman; RODECKI, Andrzej

The amount and index of catalase in chronic and acute surgical diseases
in children and adults treated by surgery. Polski tygod. lek. 12 no.38:
1457-1461 16 Sept 57.

1. (Z III Kliniki Chirurgicznej A. M. w Krakowie; kierownik: prof.
dr Jerzy Jasierski). Adres: Krakow, ul. Pradnicka 37. III Klin. Chirurg.
A. M.
          (CATALASE, determination,
                in preop. & postop. states (Pol))
          (SURGERY, OPERATIVE, metabolism,
                catalase, preop. & postop. variations (Pol))

KAMIENSKI, Roman; RODECKI, Andrzej

Vascular permeability in burns in adults and children.
Polski tygod. lek. 11 no.40:1699-1703 1 Oct 56.

1. (Z III Kliniki Chirurgicznej A.M. w Krakowie: Kierownik
prof. dr. Jerzy Jasienski) Adres: III Klinika Chirurgiczna
A.M. Krakow, Pradnicka 37.
        (BURNS, physiology
             capillary permeability in (Pol))
        (CAPILLARY PERMEABILITY, in various diseases
             burns (Pol))

RODECKI, Andrzej; KAMIENSKI, Roman

Blood platelets count in normal and toxic hyperthyroidism.
Przegl. lek. Krakow 10 no.12a:399-401 Dec 54.

1. Z III Kliniki chirurg. A.M. w Krakowie - kierownik prof.
dr. J.Jasienski
        (BLOOD PLATELETS, in various diseases
            hyperthyroidism, normal & toxic, count)
        (HYPERTHYROIDISM, blood in
            blood platelet count in normal & toxic)